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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,748	05/23/2001	Haoqiang Huang	25436/1642	9159

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EXAMINER

BAKER, MAURIE GARCIA

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/863,748	Applicant(s) HUANG ET AL.	
	Examiner Maurie G. Baker	Art Unit 1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 4,6,8,9 and 14-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Response filed December 3, 2003 is acknowledged. Claims 1, 2, 5, 7 and 10-13 were amended, claims 47 and 48 were added and no claims were cancelled.

Therefore, claims 1-48 are pending.

2. Claims 15-46 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions. Also, claims 4, 6, 8, 9, and 14 remain withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected species, there being no allowable generic claim. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

3. Newly added claims 47 and 48 do not appear to read on the elected species. Applicants have elected polypropylenimine hexadecaamine dendrimer as the elected species of dendrimer (see Response to Restriction Requirement filed March 18, 2003). This species does not include any of the additional moieties described in newly added claims 47 and 48. Therefore, claims 47 and 48 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to non-elected species, there being no allowable generic claim. Moreover, these claims appear to be drawn to process steps which are non-limiting on a claimed product.

4. Claims 1-3, 5, 7 and 10-13 remain under examination.

Status of Rejections

5. Some of the previous rejections under 35 U.S.C. 112, second paragraph are withdrawn in view of applicant's amendments. All other rejections are maintained and applicant's arguments are addressed following each rejection.

***Maintained Rejections
Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-3, 5, 7 and 10-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- A. Claim 1 (and all claims dependent thereon) is indefinite for the following reasons. First, the claim recites "an *activated* dendrimer polyamine" The term "activated" is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is simply unclear what structure is covered by the terminology "*activated* dendrimer polyamine".
- B. Claim 5 is indefinite because it is unclear how the silane containing moiety is to covalently bond the dendrimer polyamine (i.e. the linkage

sites to the dendrimer and the surface are not shown). Thus the claim is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Thus, one of ordinary skill would not know the metes and bounds of the claimed invention.

- C. Withdrawn.
- D. Withdrawn

Response to Arguments

8. Applicant's arguments filed December 3, 2003 have been considered but are not found fully persuasive. The examiner's rationale is set forth below. Note that rejections denoted C., D. and the second part of rejection A. above have been withdrawn in light of applicant's amendments.

9. Applicant argues that the amendments made "more clearly define the invention" (Response, page 11). The examiner respectfully disagrees. The amendments made do **not** clear up the ambiguity with respect to the nature of the activated dendrimer polyamine. It still remains unclear what structure is covered by the terminology "activated dendrimer polyamine".

10. Applicant points to various places in the instant specification for support. All of the cited portions merely describe examples of making/using "activated" dendrimer

polyamine surfaces. There is **no specific definition** of an activated dendrimer polyamine. Note that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

11. Also, the claims are unclear because there are recitations therein that appear to be merely intended use recitations, which are not afforded any patentable weight. See MPEP 2111.02. The instant claims also are drawn to a product, but there appear to be process limitations therein.

12. With respect to B. above, applicant again points to examples in the instant specification for linkage sites between the silane containing moiety and the dendrimer polyamine. However, these are merely examples and do not serve to adequately define the linkage. Also, again, limitations from the specification are not read into the claims.

13. Also note the following from MPEP 2173.02: If the scope of the invention sought to be patented cannot be determined from the language of the claims with a reasonable degree of certainty, a rejection of the claims under 35 U.S.C. 112, second paragraph is appropriate. *In re Wiggins*, 488 F.2d 538, 179 USPQ 421 (CCPA 1973). For these reasons and the reasons of record, the above rejections are maintained.

Maintained Rejections
Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

15. Claims 1-3, 5, 7 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim et al (US 2002/0006626 A1).

The instant claims suffer from confusion as to the specific product claimed (see paragraph 6 above). Thus the product of Kim is deemed to read on the claims as it is unclear what applicant's claims encompass.

Kim et al disclose a monolayer of functionalized dendrimers on a solid surface that are reacted with biomolecules (see Abstract). The dendrimers are polyamines with primary amine terminal groups (see Figure 1). Specifically a glass surface is treated with a silane and then reacted with a dendrimer which is further reacted with the biomolecule (see e.g. claim 9 of Kim et al). Dendrimers of different generation (different size, i.e. number of end groups) are disclosed, see page 2, 1st column. As the compositions of Kim et al read directly on the

claims, the stability properties recited in instant claims 12 and 13 would be inherent.

Response to Arguments

16. Applicant's arguments filed December 3, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

17. Applicants argue that the dendrimers used by Kim et al are not "activated" and thus do not read on the claim. However, it remains completely unclear what structure is covered by the terminology "activated dendrimer polyamine". Any dendrimer could be interpreted as being "activated". The examiner's position is that the dendrimers of Kim would indeed be activated dendrimer polyamines, absent evidence to the contrary.

18. Applicants argument that an "activated" dendrimer is different from a "functionalized" dendrimer elevates form over substance (Response, page 16). One of ordinary skill could interpret "activated" and "functionalized" to mean the same thing, depending on the chemical context. As it is ambiguous what "activated" means in the instant claims, Kim's functionalized dendrimers are deemed to read on "activated dendrimer polyamine(s)".

19. Note that "[w]hen the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that

they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The Office does not have the facilities to make such a comparison and the burden is on the applicants to establish the difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *Ex parte Gray*, 10 USPQ 2d 1922 1923 (PTO Bd. Pat. App. & Int.).

20. Applicant argues the reactive properties of the dendrimers used by Kim versus those of the instant claims. However, there is no data provided. Also, these are process limitations. The instant claims are drawn to a product. Any product capable of carrying out applicants intended use reads on the instant claims. “[E]ven though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

21. Also, “[p]roducts of identical chemical composition can not have mutually exclusive properties.” A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). It is recognized that the instant claims do not contain a specific chemical structure. However, *Kim discloses a surface that meets*

applicant's functional limitations, thus it is deemed to have the same structure and properties. Thus, Kim's surface would be reactive in the same way as the surface of the instant claims. For these reasons and the reasons of record, the above rejection under 35 U.S.C. 102(e) is maintained.

22. Claims 1, 5, 7 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Manzer et al (US 6,288,253 B1).

The instant claims suffer from confusion as to the specific product claimed (see paragraph 6 above). Thus the product of Manzer is deemed to read on the claims as it is unclear what applicant's claims encompass.

Manzer et al disclose dendrimers attached to a silica surface (see columns 11-14). The dendrimers are polyamines with primary amine terminal groups. Specifically a silica gel surface is treated with a silane and then a dendrimer is built up on this surface. Dendrimers of different generation (different size, i.e. number of end groups) are disclosed in columns 12-14. As the compositions of Manzer et al read directly on the claims, the stability properties recited in instant claims 12 and 13 would be inherent.

Response to Arguments

23. Applicant's arguments filed December 3, 2003 have been fully considered but are not found persuasive. The examiner's rationale is set forth below.

24. Applicant argues that Manzer et al do not disclose an “activated dendrimer polyamine” and thus do not read on the instant claims. The examiner respectfully disagrees. The terminology “activated dendrimer polyamine” is deemed to be indefinite. Any dendrimer could be interpreted as being “activated”. The examiner’s position is that the dendrimers of Manzer would indeed be activated dendrimer polyamines, absent evidence to the contrary. Any product capable of carrying out applicants intended use reads on the instant claims. The examiner’s position is that the product of Manzer would be capable of carrying out the intended use of the instant claims. See also paragraphs 19-21 above. For these reasons and the reasons of record, the above rejection under 35 U.S.C. 102(e) is maintained.

Status of Claims/Conclusion

25. No claims are allowed.

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maurie Garcia Baker, Ph.D. whose telephone number is (571) 272-0805. The examiner is on an increased flextime schedule; the best time to contact the examiner is Monday-Friday from 6:00-10:00 a.m.

28. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew J. Wang, can be reached at (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Maurie Garcia Baker, Ph.D.
March 4, 2004



MAURIE GARCIA BAKER PH.D.
PRIMARY EXAMINER